

Claims

What is claimed is:

Sub B17
1 1. A biomedical implant designed for implantation into a spine of a patient comprising
2 an elongated body having first and second ends, said elongated body being tapered such
3 that tapering begins at a first position on or proximate to said first end and continues
4 down the length of the elongated body down to a second position on or proximate to said
5 second end, wherein said implant is comprised of cortical, cortico-cancellous, or
6 cancellous bone.

1 2. The biomedical implant of claim 1 wherein said elongated body defines a substantially
2 dowel-like shape.

1 3. The biomedical implant of claim 1 wherein said first end comprises one or more
2 insertion holes formed into said first end such that said insertion holes are oriented along
3 the longitudinal axis of said biomedical implant, wherein said holes are configured to
4 engage a securing device.

1 4. The biomedical implant of claim 1 wherein said one or more insertion holes define a
2 circular, triangular, quadrangle, pentagonal, hexagonal, heptagonal or octagonal shape, or
3 combination thereof, and said securing device comprises inserts configured to match the
4 shape of said insertion holes.

1 5. The biomedical implant of claim 1 wherein said first end defines a wedge shape for
2 engaging a securing device.

1 6. The biomedical implant of claim 4 wherein said wedge shape comprises two or more
2 substantially planar sections that are angled obliquely in relation to the exterior surface of
3 said elongated body.

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- 1 7. The biomedical implant of claim 4, wherein said wedge shape corresponds to the
2 natural architecture of the bone from which said biomedical implant is made.
- 1 8. The biomedical implant of claim 1, wherein said first end has two or more pinch cut
2 outs formed thereon.
- 1 9. The biomedical implant of claim 1, wherein said implant comprises a channel formed
2 through said elongated body such that said channel is positioned transverse to the
3 longitudinal axis of said implant, said channel being adapted to have a biologically active
4 substance disposed therein.
- 1 10. The biomedical implant of claim 1, wherein said first end defines a peg portion
2 extending longitudinally therefrom, said peg portion configured to engage a securing
3 device.
- 1 11. A biomedical implant designed for implantation into the spine of a patient
2 comprising two or more separate sections that are configured such that said two or more
3 separate sections can be joined together, wherein upon said two or more separate sections
4 being joined, an implant is formed comprising an elongated body having a first and
5 second ends, said elongated body being tapered such that tapering begins at a first
6 position on or proximate to said first end and continues down the length of the elongated
7 body down to a second position on or proximate to said second end.
- 1 12. The biomedical implant of claim 11, wherein said implant is comprised of cortical,
2 cortico-cancellous, or cancellous bone, or a combination thereof.
- 1 13. The biomedical implant of claim 11, wherein said two or more sections comprise
2 joining holes formed therein such that said two or more sections are joined together by
3 insertion of pins through said joining holes.

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1 14. The biomedical implant of claim 13, wherein said pins are comprised of cortical
2 bone.

1 15. A method of producing a biomedical implant that comprises an elongated body
2 having a first and second ends wherein said first end comprises two or more oblique
3 sides, said method comprising obtaining a bone having a ridge naturally formed thereon
4 and excising bone block sections from said bone at an angle substantially perpendicular
5 to said ridge.

1 16. The method of claim 15, wherein said bone is selected from a bone selected from the
2 group consisting of femur, tibia, fibula, humerus, radius and ulna.

1 17. The implant according to claim 1 comprising a plurality of holes formed therein,
2 optionally connecting to a central channel formed in said implant, to aid in delivery of a
3 biologically active substance disposed on or within the implant to surrounding tissue.

1 18. The implant of claim 17 wherein said biologically active substance comprises one or
2 more substances selected from the group consisting of cells, growth factors, antibiotics,
3 nucleic acids, proteins, peptides, antineoplastics, and anti-inflammatory compounds.

1 19. The implant according to claim 1 formed substantially from human, allograft cortical
2 bone or xenograft bone.

1 20. A method of treating a defect or injury to the spine comprising obtaining a
2 biomedical implant, said biomedical implant comprising an elongated body having first
3 and second ends, said elongated body being tapered such that tapering begins at a first
4 position on or proximate to said first end and continues down the length of the elongated
5 body down to a second position on or proximate to said second end, wherein said implant
6 is comprised of cortical, cortico-cancellous, or cancellous bone; and implanting said
7 implant into a location in the spine to effect support at that location.

1 21. The method of claim 20, wherein said biomedical implant comprises two or more
2 sections joined together.

12221. The method of claim 20, wherein said implant comprises a channel formed through
2 said elongated body such that said channel is positioned transverse to the longitudinal
3 axis of said implant, said channel being adapted to have a biologically active substance
4 disposed therein.

12322. A method for fusing vertebrae which comprises making a space between the
2 vertebrae to be fused, and inserting into said space a biomedical implant, said biomedical
3 implant comprising an elongated body having first and second ends, said elongated body
4 being tapered such that tapering begins at a first position on or proximate to said first end
5 and continues down the length of the elongated body down to a second position on or
6 proximate to said second end, wherein said implant is comprised of cortical, cortico-
7 cancellous, or cancellous bone.

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